SUMMER SEMESTER 2024

RTG 2756 CYTAC SEMINAR SERIES

TUESDAY, MAY 21
17:00 IN HS5

CYTAC
RTG 2756

PROF. DR. ANNA AKHMANOVA

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CELLULAR ROADMAPS: CONTROL OF MICROTUBULE ORGANIZATION AND DYNAMICS

Microtubules are dynamic cytoskeletal filaments that control different aspects of cell architecture. Microtubules are intrinsically asymmetric polymers, with fast-growing plus ends, which in cells serve as major sites of microtubule assembly and disassembly, and slow-growing minus ends, which are often stabilized and attached to different cellular structures. In my lab, we use in vitro assays combined with single molecule imaging to dissect how the proteins that bind to microtubule plus- and minus ends control microtubule nucleation and growth and thus regulate formation of dynamic microtubule networks or the stable cores of centrosomes and cilia. In parallel, we employ live cell imaging to study how microtubules contribute to cell polarity, migration, division and differentiation. In my seminar, I will discuss the interplay between microtubule nucleation by gamma-tubulin ring complex, minus end stabilization by CAMSAP family proteins and microtubule severing by katanin. I will also describe the characterization of an optogenetic tool for local microtubule disassembly and its application to studying cell architecture.